

IAQ *Tools for Schools*

B U L L E T I N



*IAQ Tools for Schools
Action Kit*

A Note From the Director

Welcome to the premier edition of EPA's ***Indoor Air Quality (IAQ) Tools for Schools Bulletin***. In response to nationwide concern about indoor air quality in schools, EPA's Indoor Environment's Division developed the *IAQ Tools for Schools* Action Kit. The Kit was designed in collaboration with six sponsoring organizations. It is a no cost/low cost approach designed to guide parents, teachers, school administrators, and facilities personnel through the process of improving the air quality in our nation's schools. An estimated one in five Americans spend their day in schools. And with indoor pollutant levels often reaching 2-5 times higher than outdoor levels, good indoor air quality is more important than ever--especially to children who are particularly susceptible to adverse health effects from indoor pollutants.

Since 1996, approximately 20,000 schools across the nation have received the *IAQ Tools for Schools* Kit. Many of these schools have taken action to improve their indoor environment. But, we have heard from many people who are encountering obstacles as they use the Kit. Our hope is that this *Bulletin* will provide a forum for sharing information and solutions for implementing the *IAQ Tools for Schools* Kit.

In our premier issue we take a look back at the past school year. We are proud of the strides we have made towards cleaning up the indoor environments of schools across the country. But there is still much work to be done. As the Director of the EPA's Indoor Environments Division, I invite you to submit your questions, articles, and advice for future issues of the *Bulletin*. Whether you are teaching in a rural school, managing the facilities in an urban school district, or sponsoring an *IAQ Tools for Schools* workshop, we would like to hear from you as we work together to improve our nation's learning environment.

Mary T. Smith

Director
Indoor Environments Division

ALA and IAQ TFS In the Green Mountains

Submitted by Gregory M. James
Tobacco Control &
Environmental Health Programs
American Lung Association (ALA)
of Vermont

For the fourth consecutive year the American Lung Association of Vermont's participation with *Indoor Air Quality Tools for Schools (IAQ TFS)* has created a great deal of excitement for school personnel across the state. ALA-Vermont's *IAQ TFS* program implementation began very slowly but has grown in reputation and demand since its debut. In

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Training continued...

May of 1998, with the invaluable assistance of EPA's Mike Rogers, ALA-Vermont trained 28 people representing 15 schools within two school districts of northeastern Vermont in the implementation of the *IAQ Tools for Schools* program.

This one-day training consisted of workshops providing basic introduction to indoor air quality issues, ventilation issues, instruction on how to properly utilize the *IAQ Tools for Schools* Kit, as well as a walk-through of a local school to acquaint the participants with the checklists. Follow-up is currently underway and will offer information regarding the program's success in its implementation.

Building on the success of last school year, ALA-Vermont continues to replicate this training elsewhere in the state.

In February, ALA-Vermont held its first of three *IAQ Tools for Schools* trainings. ALA-Vermont trained 30 school staff representing 15 different schools from four counties of central Vermont. The second training was held May 25th, and schools from north-central Vermont are showing a great deal of interest.

The American Lung Association of Vermont is determined to train 70 representatives from 35 schools across the state to implement the *IAQ Tools for Schools* clean air program this year. Lessons learned and

follow-up information will be offered to EPA periodically so we all can get a sense of how the program is working throughout Vermont.

Until then, take heart in the fact that the word is getting out in the Green Mountains and schools are now seeking to improve the "breathability" of their air. The ALA-Vermont is proud to be able to answer the call with the *IAQ Tools for Schools* program. Together the Environmental Protection Agency and the American Lung Association are helping Vermonters breathe a lot easier.



For more information about the American Lung Association, visit their web site at:
www.lungusa.org/index.html

Why Use *IAQ Tools for Schools*?

- < Poor indoor air quality diminishes health and the ability to learn
- < One in 5 Americans spends their days in elementary or secondary schools.
- < A 1995 General Accounting Office report estimated that at least 50% of our nation's schools have problems relating to indoor air quality
- < School enrollment is surging, yet indoor air quality keeps getting worse.
- < It is estimated that over 5 million children in this country suffer from asthma.
- < The number one reason for children missing school is due to asthma.
- < Schools are crowded; they have lots of pollutant sources (labs, art supplies, cleaning supplies, excessive moisture) and old heating and ventilation equipment. All of these things contribute to poor indoor air quality.
- < *IAQ Tools for Schools* is a low-cost/no-cost solution to improving indoor air quality in schools.

IAQ in Schools Focus Groups

In January, the Consumer Federation of America Foundation, in partnership with EPA, conducted focus groups to get feedback from school personnel about implementing EPA's *IAQ Tools for Schools* Kit. Focus groups were conducted in Baltimore, Maryland and in Walnut Creek, California, a suburb of San Francisco.

Four focus groups were held in all. The groups were comprised of principals, assistant principals, teachers, and facilities personnel. Participants represented a diverse

continued

Stakeholders

population from urban, low-income, suburban, public and private schools.

What We Learned

Most focus group participants stated that in order to make IAQ a priority for their schools, they would like to see data showing links between good IAQ and student health, attendance and achievement. Because schools are focused on raising test scores, anything that could be linked to that goal would be a higher priority for schools.

When asked about possible incentives to implement the *IAQ Tools for Schools* Kit, participants expressed interest in receiving a national, top level award given by EPA's Administrator.

Some of the participants (teachers and facilities managers) suggested that implementation of the Kit might require people to work in ways that were outside of their "work rules," per their union-negotiated contracts.

Still other participants were excited about using the Kit as the basis for either a school project or a curriculum subject. When asked about IAQ practices in their schools, most facilities personnel were already implementing at least some good IAQ practices. In general, the facilities managers knew about IAQ and *owned* the issue. Several had seen IAQ problems in their schools that seemed to result in ill effects on student health.

Overall, the focus groups provided EPA's Schools Team with good basic information which helped the team develop a draft Marketing, Technical Support and Awards program for encouraging more implementation of *IAQ Tools for Schools*. For more on this, see the next article.

EPA Holds Major Meeting for IAQ TfS Stakeholders

In April, EPA sponsored a full day meeting in Washington, DC to get stakeholder participation for developing a Marketing, Technical Support and Awards Program for implementing the *IAQ Tools for Schools* Action Kit.



Center for Healthy Buildings Director, David Rowson presents at the stakeholders meeting in April.

Nearly 100 participants attended, representing: schools and school districts currently using good indoor air practices; State IAQ programs; non-profit organizations which are involved in supporting the use of good indoor air practices in schools; private industry representation; local government officials; other federal government agencies; and EPA regional offices around the country.

EPA's goal in creating the Marketing, Technical Support and Awards Program for implementing the *IAQ Tools for Schools* Kit was simply to make it easier and more rewarding for schools to use *IAQ Tools for Schools*. "Based on experience and feedback from many schools who are working with *IAQ TfS*, we heard many ideas about additional things they could be doing to make schools a

healthier place for learning and teaching," stated Steven D. Page, Director of EPA's Office of Radiation and Indoor Air, during his opening remarks. EPA grouped these ideas into six major themes:

- 1) Create an outreach campaign on IAQ and the *IAQ TfS* Kit
- 2) Focus recruitment on schools/school districts
- 3) Establish a networking/mentoring program for schools utilizing schools/school districts with experience using the Kit
- 4) Develop technical support tools to enhance implementation of the Kit
- 5) Launch an *IAQ Tools for Schools* Awards/Recognition Program for schools
- 6) Launch a Schools-Private Sector Partners Awards Program to acknowledge the commitment of private sector support.

The meeting was very successful and provided stakeholders with an opportunity to provide feedback and offer critical ideas necessary to shape a successful strategy. Meeting participants were also given the opportunity to meet with other IAQ professionals from around the country, and hear about other schools and school districts who are successfully implementing the *IAQ Tools for Schools* Kit.

EPA's next steps include sending out proceedings, attendees list and conclusions of the meeting. EPA will continue to analyze the input from the meeting and plans to formally launch the Marketing, Technical Support and Awards Program for *IAQ Tools for Schools* in the fall of 1999.

For more information contact Michele Guarneiri at (202) 564-9099.

Schools Success Stories

Taking Action

If you have seen the *IAQ Tools for Schools* video, "Taking Action," you may remember Priscilla Santiago as the school nurse who initiated the *IAQ Tools for Schools* Kit in her school, Little Harbour in Portsmouth, New Hampshire. In the video, she tells *This Old House* star, Richard Trethewey, how she helped her school clean up its act using the Kit.

Little Harbour School was originally built in the 1960s. The popular educational theory of that time was that students would learn better in an open environment where they could see and hear everything that was going on around them. The architecture of the school reflected this theory so the school was built in three distinct pods; an auditorium, an administration building, and classrooms.

When this method of learning was no longer popular, the space was divided into smaller, more traditional sized classrooms. But the mechanical system was built to accommodate a large space, not multiple smaller spaces. So ventilation became an issue. How could students and teachers have good, clean air in the smaller spaces where they spent the majority of their days?

The following interview with Priscilla Santiago summarizes some of the challenges and solutions involved with using the *IAQ Tools for Schools* Kit at Little Harbour.

Q: When did you first suspect that there was a problem with the air quality in your school?

A: Around late 1993 I noticed a lot of cases of respiratory problems. I suspected that it might be an indoor air quality problem. So I developed a

survey and asked the teachers to respond.

Q: What happened next?

A: I received about an 80 percent response rate on the survey. Teachers had chronic bronchitis, sinusitis, and there were even some cases of newly diagnosed asthma. So I knew something had to be done.

Q: Once the results were in, how did you choose EPA's IAQ Tools for Schools Kit to assist you in achieving better indoor air quality in Little Harbour?

A: I attended an *IAQ Tools for Schools* workshop in November 1996. Then things finally began to come together. I was very excited because the Kit seemed like the perfect solution. I was fired up to begin implementing right away. But when I went to our principal, I encountered some resistance. He was apprehensive about calling attention to school problems.

Q: That's understandable. How did you proceed?

A: It wasn't just the principal who was apprehensive. The maintenance and custodial staff were also hesitant. Everyone was afraid it would cost a lot of money and the funds would have to come out of their budget. I think people were also skeptical of a school nurse saying that the ventilation system doesn't work.

Q: So, how did you proceed?

A: It took a combined effort on the part of the parents, teachers, superintendent's office; everyone who had a stake in the students' and staff's health. I think it's important to get everyone involved early in the process.

Q: Once you had the school's leadership involved, were you able to begin implementing?



This Old House star, Richard Trethewey, takes a break during the filming of *Taking Action*.

A: We were just beginning to get organized at that point. We formed a team comprised of teachers, maintenance and custodial staff, parents, and school leadership.

Q: What were some of your biggest problems in implementing?

A: We identified several items for improvement that wouldn't cost too much, but there were a few big-ticket items that we were concerned would cost more to fix. Once the team was formed and the process began, it was good to have the business manager involved. It took a lot of negotiating for the school to make the investment. But once we did, we think it was worth it.

Q: What's next?

A: We want to survey teachers and staff to evaluate our success. So far, we are very pleased with the results. Our school looks and feels much better and we are very proud of the work we have done to improve our indoor air quality.

Federal Coordination

EPA Co-sponsors National Symposium



This fall, EPA co-sponsored, with the Department of Education, The White House Millennium Council, The Department of Energy, and others, *The National Symposium on School Design: Schools as Centers of Community*, in Washington, D.C. The Symposium brought together educators, architects, school board members and community leaders to discuss creating quality learning environments for the nation's children.

The event consisted of an opening plenary session, exhibits by sponsoring organizations, workshop sessions on various design issues for new schools, and a summary plenary session where workshop leaders reported on workshop outcomes. There was also a live video teleconference scheduled with Vice President Gore (unfortunately canceled at the last minute because he had to attend Mayor Tom Bradley's funeral in California.)

One of the highlights of the Symposium was Secretary Riley's visit to the *IAQ Tools for Schools* exhibit area where he spoke to EPA staff about the importance of indoor air quality in school buildings. In his closing remarks for the Symposium, Secretary Riley repeated his concerns about asthma and other indoor air quality issues.

Another highlight was a workshop session facilitated by David Rowson,

Director of EPA's Center for Healthy Buildings. A full spectrum of national experts attended the session, *A Deep Breath: Air Quality in Schools*, including health professionals, advocacy representatives, school administrators, architects, engineers, product manufacturers, and state legislators.

The workgroup concluded that indoor air quality is a key principle in the design, construction, and renovation of schools, and that a dramatic increase in attention to IAQ among education and design professionals is needed. In terms of good IAQ, the consensus on this issue was perhaps the most important agreement to emerge from the Symposium.

In fact, Bob Thompson and Greg Brunner, of the Indoor Environments Division, are now leading EPA's efforts to write guidance for new schools construction. *The Tools for New Schools* guidance package should be available from EPA next summer.

Finally, the Symposium produced the document, ***A Citizen's Action Guide*** *National Symposium on*



Members of EPA's schools team pose with Secretary of Education Richard Riley. From left: Paula Selzer, Susan Hernandez, Secretary Riley, Jennifer Keller, John Guevin.

School Design: Schools as Centers of Community. The publication offers guidance on planning and implementing design principles for schools as Centers of Community. It also lists various projects (with contacts) that have been planned and designed to serve larger communities. This booklet will be finalized in the fall of 1999. A draft is currently available. (See below).

It is important to remember the goal of creating a healthy building whether designing, constructing, or renovating a school. A healthy learning environment leads to healthier students and teachers, and results in higher quality education.

For More Information:

Contact Bob Thompson of EPA's Indoor Environments Division for details about for *Tools for New Schools* at (202) 564-9056 or by email at thompson.bob@epa.gov.

You can also order the Department of Education's draft publication *A Citizen's Action Guide: National Symposium on School Design*, or order the video from the Department of Education's web site, *On-line Ed Pubs* at <http://www.ed.gov/pubs/edpubs.html>. (key in "Design Symposium") Or call 1-800-USA-LEARN for education-related issues.

School News From A round the Country

Pennsylvania School District Puts Children's Health First

The Bensalem, Pennsylvania School District was honored this past December by EPA for taking a major step forward in combating indoor air pollution in schools. During a recognition ceremony at Shafer Middle School in Bensalem, three pilot schools, Cornwells Elementary School, Belmont Hills Elementary School and Shafer Middle School, were awarded the *IAQ Tools for Schools Certificate* for their efforts in this program.

"We're extremely pleased with Bensalem School District's support for *IAQ Tools for Schools*, especially its involvement with the pilot schools program," said EPA Regional Administrator W. Michael McCabe. "Bensalem is showing how much they care about protecting our children's health by participating in this program."

The *IAQ Tools for Schools Kit* offers sound guidance that gives school officials the ability to improve indoor air quality and create a healthier environment for children and staff. Also, good indoor air quality can contribute to a favorable learning environment for children, and better productivity for teachers and staff. As each day passes, the 110,000 kindergarten through twelfth grade schools in the U.S. are spending increasing amounts of their limited resources—time and money—attempting to fix real or perceived indoor air quality problems.

A 1995 report by the U.S. Government Accounting Office, *The Condition of America's Schools*, noted that over half of the schools surveyed reported at least one environmental

problem which affected indoor air quality. The voluntary guidance in *Indoor Air Quality Tools for Schools* can save schools time and money so that attention can be directed to educating children.

"I'm proud to be a part of a program that not only makes environmental sense for the school district, but protects the health of the children, teachers, and staff as well," said Tom Vasek, Indoor Air Quality Coordinator for the Bensalem School District.

Minneapolis Incorporates IAQ Principles Into Elementary School Design

Minneapolis Public Schools (MPS) has designed and built Whittier Community School for the Arts, an inner-city elementary school that has incorporated IAQ principles in its design.

The school opened for classes in the Fall of 1997 and currently serves students in kindergarten through fifth grade. In addition to the new school building, the complex includes an existing park building and gymnasium, and a Neighborhood Early Learning Center. The project was implemented with the cooperative efforts of the Clean Air Group (formerly affiliated with the American Lung Association as the Healthy Building Group), EPA, and Honeywell. Funding was provided by MPS.

According to the Clean Air Group, "Students attending inner city schools are more likely to be exposed to poor IAQ because of several factors; poor building maintenance due to funding shortages; outdoor air pollution from busy streets near these schools; and living in substandard housing."

In order to establish statistical evidence of the improved indoor air quality and subsequent health benefits, The Clean Air Group, along with

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Whittier Community School for the Arts. Minneapolis, Minnesota.

School News From A round the Country

the University of Minnesota, the American Lung Association and MPS is conducting a 3-year study. The study will: 1) compare the indoor air quality in Whittier with an older control school, and 2) compare the exposures of the students at the two schools to environmental health hazards.

To find out more about the Whittier school and other similar projects contact Jennifer Keller at 202-564-9338 or by email at: keller.jennifer@epa.gov.

Virginia School Puts *IAQ TFS* Project on Web Site

The Cora Kelly Elementary School in Alexandria, Virginia has taken indoor air quality on-line with their student science project.

Students at the elementary school surveyed schools across the nation via email to determine if there was a link between indoor air quality and the age of the school building. Of the 30 school buildings that participated in the survey, 28 of them were at least 30 years old.

The students concluded that building age and number of doors and windows did not necessarily impact the buildings' air quality. They did find, however, that several environmental problems (ventilation and leaks) seem to be consistent throughout the buildings. The participating schools will receive the *IAQ Tools for Schools* Kit to do a thorough IAQ assessment.

For more information visit the Cora Kelly website at: www.acps.k12.va.us/ckms/projects.htm

ALA Los Angeles Pilots Mentor Program

EPA's Region 9 recently funded a program with the American Lung Association of Los Angeles County. The pilot program works cooperatively with the American Industrial Hygiene Association (AIHA) to provide volunteer "mentors" to assist schools in implementing *IAQ Tools for Schools*.

In the summer of 1998, ALA of Los Angeles County, along with EPA headquarters and regional staff, trained 22 volunteers from AIHA to mentor area schools. ALA then recruited 14 mentors who are working with school coordinators to actively implement *IAQ Tools for Schools* in seven schools, impacting over 4600 students.

According to ALA Program Manager, David Berger, "We are most successful in reaching the schools who recognize that there is a relationship between environmental health and their students." Once a school is interested, ALA tries to provide a mentor. "The real challenge is to get both the individual schools and the district to participate. The process has been variable at each school, but the greatest results were achieved when four components were present; representation from ALA, the AIHA mentor, the school coordinator, and the district contact."

Since August, ALA has reached over 300 school personnel through training. The next step is to evaluate the pilot, identify other potential partners, and pursue other funding options. ALA is optimistic. States Mr. Berger, "The Lung Association is committed to school environmental health."

For more information on the ALA-AIHA pilot program contact David Berger at: (323) 935-5864 or email to: bergerd@lalung.org.

Students Benefit from Cooperation in NYC

Students from two schools in New York City's East Harlem section will be breathing a little easier thanks to *IAQ Tools for Schools*. With support from EPA Region 2, Mt. Sinai Medical Center Department of Community Medicine, and the Director of Environmental Health and Safety for the NYC Board of Education, two schools have completed implementing an IAQ management program.

School District 4, which encompasses East Harlem, is plagued by asthma rates several times higher than the national average. In fact, neighborhoods in East Harlem, West Harlem and South Bronx lead the nation in numbers of asthmatic children and asthma severity. It was through surveys done by Mt. Sinai on childhood asthma that District 4 learned of the affects of poor IAQ and the *IAQ Tools for Schools* Kit. Subsequently, each school identified a coordinator to lead implementation efforts.

As a result of these successful efforts, District 4 has expressed a strong desire to expand the *IAQ Tools for Schools* program to all twelve school buildings in the district. With the growing support of the Board of Education, this is a goal that seems readily achievable for District 4, and hopefully throughout the school system.

For more information contact Jean Feola at EPA's Region 2 office by email at: feola.jean@epa.gov

EPA and Partners Train Community Leaders



Members of EPA's Schools Team have been busy this school year coordinating training with some of our *IAQ Tools for Schools* partnership organizations. In September 1998, the National Parent-Teachers Association (PTA) held a three-day training with over 25 participants from across the nation. In November 1998 and again in April 1999, the National Education Association (NEA) sponsored trainings attended by nearly 40 people. And in December 1998, the National Association of Counties (NACo) sponsored an *IAQ Tools for Schools* training attended by 22 people. All trainings were held in Washington, D.C.

The idea behind these trainings is to provide participants with the skills and support they need to return to their communities and begin using the *IAQ Tools for Schools* Kit.

The NACo training was especially unique because it brought together in one room key local decision makers. For example, each community was represented by an elected official, a superintendent, and a health and safety officer, who attended the training as a team. This enabled the team to work together on issues specific to their communities.

The two-day training focused on several aspects. First, participants were introduced to the Kit through a general background presentation about indoor air quality issues and how the Kit is designed to address these issues. This was followed by presentations on radon, and asthma; specifically, the IAQ triggers that can

cause asthma and how to identify students who might have asthma.

The training also included an introductory lesson explaining the mechanics of a school ventilation system. At least half the day of training was spent on a field trip to a local school so participants could view and analyze IAQ problems first hand, with the intent to return to their communities equipped to put the Kit into action.

Finally, participants worked with each other to brainstorm about potential obstacles to implementation, and to develop an action plan for achieving results.

Since EPA began training people to use the *IAQ Tools for Schools* Kit two years ago, hundreds of people have been trained and

hundreds more are using the program, or have made commitments to use it. As of December 1998, over 20,000 *IAQ Tools for Schools* Kits had been distributed nationwide.

If you are interested in attending a training, please check the *IAQ TfS* training web site at: www.epa.gov/iaq/schools/training.htm/



EPA's Bob Thompson leads an IAQ field training session at a school in Arlington, Virginia.

Information Resources



To Order the Kit:

To order the *IAQ Tools for Schools* Kit **free of charge** fax your request on school letterhead to the IAQ INFO Clearinghouse at: FAX (703) 356-5386 or call: (800) 438-4318.

If ordering multiple copies, or if you don't have school letter head, you may order copies of the Kit for \$22.00 from the Government Printing Office by calling (202) 512-1800. The order number is: 055-000-00536-0.

You can also download a text-only version from our web site at: www.epa.gov/iaq/schools

Lights, Camera...



Taking Action, the newly-released video produced by EPA and partners, is now available. In *Taking Action*, Richard Trethewey of the well-known series, *This Old House*, shows how one school successfully implemented the *IAQ Tools for Schools* Action Kit.

In **Ventilation Basics**, Steve Thomas and Richard Trethewey

explain the importance of good indoor air quality and show how to properly operate and maintain school ventilation systems. Many indoor air quality problems can be prevented or solved by in-house staff using the basic techniques provided in these videos. Both videos are now available on one VHS cassette.

It is important that these videos be used in conjunction with guidance contained in the *Indoor Air Quality Tools for Schools* Action Kit. For more information on other indoor air quality topics, contact the IAQ INFO Clearinghouse: (800) 438-4218 or (703) 356-5346. Fax (703) 356-5386 or visit EPA's website at: www.epa.gov/iaq.

Let Us Hear From You!

Our main concern is protecting children's health and the environment from harmful indoor air pollutants. We work cooperatively with people and organizations who share our concern about health and environmental issues pertaining to indoor air quality.

In future editions of the *IAQ Tools for Schools Bulletin*, we would like to share some of your perspectives on issues, successes, and challenges you have experienced. Whether you use the guidance in our Kit, or use another means of improving the air quality in schools, we would like to hear from you.

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